

Title: Math Element Card		
Grade: 8		
PA Core Standard: CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations		
PA Connector:		Solve linear equations with 1 variable
Strand: Algebraic Concepts		Family: Problem Solving and Using Variables
Progress Indicator: <i>M.PRF.1g modeling, solving, and explaining contextualized problems using various representations such as graphs, tables, functions, and equations</i>		
Big Idea(s): Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.		
Essential Question(s): How can expressions, equations, and inequalities be used to quantify, solve, model and/or analyze mathematical situations?		
Foundational Knowledge: <ul style="list-style-type: none">• Use manipulatives or graphic organizer to solve a problem.• Create a pictorial array of a simple equation to translate wording to solve for x or y		
Key Vocabulary, Concepts and Symbols: <ul style="list-style-type: none">• Understand concepts and symbols +, -, X, ÷, =, ≠• Understands concepts and vocabulary: variable, equation		
Suggested Instructional Strategies: <ul style="list-style-type: none">• Explicit strategy to solve equation by dividing both sides of the equation by the value in front of the variable and then simplify• Use of trial and error to determine the value of x or y (is the product too low, too high)• Use arrays (e.g., $3y = 12$; a total of 12 counters, divided into three equal sets, how many tokens in each set (= “y”))• Task analysis<ul style="list-style-type: none">○ Read the story problem○ Identify what question is being asked / x represents (define “x”)○ Identify the facts and the operation (+, - x, ÷) in a story to write an equation.○ Solve the equation for “x”.• Show the answer as “x” = ____		
Supports and Scaffolds: <ul style="list-style-type: none">• Counters• Grids or graphic organizers to create arrays• Multiplication chart• Calculator		